



**Keynote by Stephen Lewis Delivered at the Inaugural Session of the
47th Union World Conference on Lung Health¹
Liverpool, UK, October 26, 2016**

I vividly remember, many years ago, addressing the opening of a Union conference in Montreal, Canada, my country. That's what makes this evening a particularly memorable moment for me: no one ever invites me back. I thank you for your compassion.

I have to say that this wasn't an easy speech for which to prepare. I started and re-started a number of times, which is frankly uncharacteristic. I have so many impressions and instincts and ideas swirling through my mind, that I'm groping for coherence.

So what I want to do is to give my remarks some context, and then disgorge a series of proposals that may or may not sit well with various parts of this audience. But I assure you they come from the heart.

First, then, context.

When I was the UN special envoy on HIV/AIDS in Africa, I spent over five years, from 2001 through 2006 watching people die. More accurately, watching people die, agonizing deaths, unnecessarily, as entire families, communities, societies were torn asunder. We had antiretroviral drugs: they just didn't roll out fast enough to save, literally, millions of lives. There was passivity, denialism, negligence, incompetence, indifference and racism ... an entire litany of indescribable folly that reduced the human condition to tatters. There was a universal portrait: a generation of little children, leaning against the inner wall of a hut, terrified, uncomprehending, as their mother slipped away.

It's obviously far better now than it was then. But I'm moved to recall that period because the fact that our response to TB is similarly inadequate, and that we're losing nearly two million people a year unnecessarily, is too haunting to cope with. It's an even greater assault on the psyche when you realize that HIV/AIDS has no cure; it's still seen as a death warrant in many parts of the world. But TB, as we all know, can be completely cured. There is not a tenable reason on earth to lose those two million lives.

This is not the siege of Aleppo, this isn't the attack on Mosul, this isn't the roving killer militias of the Congo, this isn't a hurricane or an earthquake or a tsunami: this is a communicable disease that we can control and defeat. So if you'll excuse my simple-minded proposition: let's do exactly that.

In a crowd like this, I don't have to enumerate the findings of the recent WHO annual report. Everyone knows that there are over ten million cases of TB annually, one million of them children; everyone knows

¹ The overwhelming majority of the text is as delivered; however, modest edits, for the sake of clarity, have been incorporated into this version.

that there are over four million unidentified and missing, everyone knows that there are one million eight hundred thousand deaths, two hundred and ten thousand of whom are children; that those numbers are significant under-estimates because the survey data is incomplete, or non-existent; that there are 580,000 cases of MDR-TB and RR-TB only 120,000 of whom are treated; that there are new drugs in the pipeline, moving slowly; that there are new diagnostics in the pipeline, moving slowly; that we face a calamitous shortfall in funding. The list multiplies: it's all the stuff of current knowledge.

But what stops me in my tracks is the fact that there is so much going on, so many groups determined to subdue TB and wrestle it to permanent elimination. If we managed to pull everything together, then a breakthrough is very much in sight.

I admit I'm new to the issue. I shouldn't be, given the rates of co-infection, HIV and TB, but I am. I've spent much of the last three months, with my AIDS-Free World colleague Georgia White, insatiably devouring material and speaking to a pantheon of remarkable people fighting the good fight, and my sense of optimism is profound.

Let me emphasize that I'm no romantic pollyanna. In truth, I'm a crusty geriatric steeped in cynicism. When you've spent a good chunk of life fighting the war against AIDS, you necessarily view every claim of progress with caution. But I simply have to say, unguarded, unvarnished, that there's something palpable brewing in the battle against tuberculosis ... that at this very conference the numbers of significant scientific announcements, the shared sense of activity on the ground, the growing resolve of the thirty high burden countries, the increasing tempo of civil society and, above all, the seething impatience with the incrementalism that tears life from two million people suggests that a powerful change is coming.

With that in my mind, I have ten thoughts. If you find them unpalatable, you can run me out of town when I'm done.

Number 1: It's conventional wisdom to know that what happens in-country, at the grassroots, is everything. Governments and ministries of health must be mobilized, or we will not succeed. But there's a problem. Who is to do the mobilizing, and even more, who is to do the follow-up in those countries—not all countries—but in those countries that need it? We have so many excellent national TB program managers ... how do we give them support from outside that is collaborative and collegial, never intrusive or demanding.

When Mario Raviglione visits a country to discuss or to monitor programs on TB, whom does he leave behind? Yes, there are regional offices of WHO, but staff coverage of countries in the regions is inevitably thin, not to mention that the regions often regard themselves as independent fiefdoms. WHO is a specialized agency; it's not a UN fund or program on the ground with oodles of people and money. So who does the day-to day follow-up? With the best intentions in the world, WHO is curtailed.

When Lucica Ditiu or Joanne Carter or Dr. Motsoaledi visit a country on behalf of the STOP-TB Partnership, whom do they leave behind to do the follow-up? They don't have a massive staff to populate the country terrain of TB, and knock on the door of the national TB manager to offer regular ongoing assistance. When Eric Goosby goes to a country to provide advice on dealing with TB, who is left behind to follow-up consistently ... I don't mean intermittently; I mean consistently? Eric isn't here

tonight. Do you know where he is? He's on his way to Equatorial Guinea for three days—the man is a hero—to help them devise an HIV/TB program. And then he leaves that beleaguered, fragile, impoverished country, and who stays behind to do the follow-up? Well, UNAIDS will have someone to deal with HIV—sadly, UNAIDS has never shown much interest in TB, a fact I find bewildering—but even though I haven't checked, I'm prepared to bet that WHO has no one permanent on the ground to oversee TB.

That's why I put forward an idea that turns out to be contentious.

I would submit that we have to find a UN agency to give us some dedicated help. And the only one I can logically think of, who might be willing and able is the United Nations Development Program, UNDP. Now please don't give me a lecture about UN bureaucracy, and the frustrations with UNDP in this or that country. I've worked directly and indirectly with the United Nations for more than thirty-two years. I am familiar, to the point of cardiac arrest with the often impenetrable labyrinth of the organization. But I also know it can perform superbly. UNDP is head of the UN family in every field office, it has staff and resources, it has ready access to every level of government, including the minister of finance and the president or prime minister; it already does substantial TB work with the Global Fund, it has excellent headquarters staff; it even has an administrator who was a candidate for UN secretary-general. She obviously didn't win, but then, no woman was destined to win in the face of the ravenous patriarchy.

We could start with two or three pilots in crucial countries and see what happens. Let's give it a try. What could we lose?

Number 2: Speaking of UN agencies, why the silence amongst some of them? Take UNICEF: one million children at stake, and on tuberculosis, UNICEF is virtually invisible ... it has one, yes one, magnificent staff member at headquarters. Where is the voice (let alone the assistance) of the Executive Director? These people have to be called out. They have more than a moral obligation; they actually have an obligation rooted in international human rights law: it's called the *Convention on the Rights of the Child*. By ignoring TB, UNICEF is in violation of its own convention. We're simply asking them to do their job. UNICEF is an incredibly powerful agency; to have UNICEF as an active ally can mean everything at country level. So too, UNFPA and the World Food Program. The executive-directors should be called together, if necessary summoned by the next Director-General of WHO as one of his or her first acts, and demand collaboration.

Enough of the niceties. Enough of the internal rivalries. We're dealing with an infectious contagion. Surely at this auspicious moment, we can set aside questions of turf or ego and take advantage of the shimmering hope on the horizon.

But there are other parts of the UN family that also have a role. There are the UN special rapporteurs; in particular, the Special Rapporteur on health. These are not throwaway roles in the international system. The previous rapporteur for health, Anand Grover of India, made a qualitative difference to the progress in global public health. Given that India is possibly the most recalcitrant of countries when it comes to addressing TB, with one of the worst records of all, Anand Grover, and his Lawyer's Collective, could be a major ally. The present Special Rapporteur for extreme poverty and human rights, Philip Alston, was instrumental in persuading the United Nations to reverse itself completely, and prepare a major package of compensation for those families and communities devastated by the cholera in Haiti

transmitted by United Nations peacekeepers. In fact, he presented his final report to the United Nations just yesterday. TB is a disease firmly linked to poverty: why not conscript the Special Rapporteur in our collective battle?

Number 3: As of January 1st, 2017, we have a new Secretary-General. He's already begun meetings with a variety of countries and groups. The TB community must sit down with Mr. Guterres, and indeed with the President of the General Assembly as well, at the earliest possible moment, and set out your demands. You want a High-Level Meeting in 2017? Put it on their agendas.

Number 4: It would be of great value to have a Security Council resolution. There is an important precedent. In the year 2000, the United States introduced a resolution on HIV/AIDS, the first time an issue of global health was considered a matter of international peace and security. It captured instantaneous attention. You will note that AMR—antimicrobial resistance—in the most recent High-Level Meeting is similarly characterized as a matter of peace and security. And at the heart of AMR lies MDR-TB.

There are five new members on the Security Council as of January 1st: Ethiopia, Kazakhstan, Bolivia, Sweden and Italy. You know where these countries stand on TB better than I: choose the most sympathetic to introduce a resolution. It would be a dramatic first initiative for a new council member. It would also provide an equally dramatic jolt to the world's response to tuberculosis.

Number 5: I'm extremely impressed with the emergence of the Global Parliamentary Caucus on TB. I spent more than fifteen years in a parliament myself and am deeply familiar with the difference parliamentarians can make. The Global Caucus is a notable resource, and if I may be so bold, with Nick Herbert heading it, it has truly effective leadership.

Political pressure is indispensable in changing the trajectory of tuberculosis. Apart from questions that can be asked in parliament, or committees to which briefs can be submitted, or crucial meetings that can be convened, or cabinet ministers that can be approached, including the minister of finance who holds the purse strings, these are voices, voices to build a crescendo of awareness, indignation and resolve across the land. Look, I admit: there are some political voices today, entirely deranged and lunatic, that we can do without. But I'm speaking of voices of clarity, principle, majesty that ring from the rooftops, telling societies what's at stake. We need more of them, in every country. That's what the Global Caucus is all about.

Number 6: The matter of funding. This is the catastrophic dimension of the struggle. It is beyond belief that we should be in this financial straightjacket ... almost \$2 billion short in 2016 for prevention, diagnosis and treatment, and \$1.6 billion short for research and development upon which the hoped-for new paradigm depends. The fact that we've never received more than \$700 million in any one year for R & D over the last decade; the fact that the \$621 million received this year is not just a brutal reduction of \$53 million compared to last year, but is the lowest annual amount for R & D since 2008; the fact that the Global Plan called for \$9.8 billion from 2011 to 2015, of which \$3.3 billion was contributed, barely a third of the total ... when you take it all together it's a nightmare of underfunding.

And don't forget, this information has been compiled by the Treatment Action Group, year after year, in an absolutely impeccable compendium of authoritative statistical perfection. I've rarely seen anything quite like it. TAG should receive an honorary doctorate in methodology.

But the real point to make is that the amounts we're talking about, a few billion dollars, is so picayune in the world of national and international finance, that it's embarrassing. Something has gone dreadfully wrong. We have to concede that our advocacy is failing.

So where do we turn? The first stop I think is the World Bank. I reported to the TB-2016 pre-conference in Durban that I had spoken to Jim Kim, President of the Bank, knowing of his commitment to ending TB, and he offered to meet with a representative group of advocates and discuss, concretely, innovative forms of financing for tuberculosis. Timetables for the meeting haven't worked as yet, so I called Jim again just ten days ago, and he repeated his offer. We must take him up on it. My experience with Jim Kim, and I've had the privilege of working closely with him in the past, is that when he gets involved in something, it moves.

The next stop should be the Global Fund. Mark Dybul at the STOP-TB meeting in New York a month ago, pointed out that the 18% level of Global Fund financing for TB was largely explained by the countries known as the BRICS where TB is concentrated. Overwhelmingly, with India as an exception, they are not funded by the Global Fund. The BRICS rely on domestic revenue. But that leaves a significant clutch of very poor countries heavily dependent on international funding. It seems to me, using the figures available, that a case can be made to the Global Fund that there has to be special consideration for what has emerged as the greatest infectious disease killer on the planet.

That's not to depreciate the existing contribution of the Global Fund. We couldn't survive without it.

The third stop should probably be a carefully-orchestrated raid, carried out with exquisite diplomatic finesse, on the large pots of money being assembled for anti-microbial resistance. Obviously, MDR-TB is central to the analysis of AMR. Tuberculosis should be entitled to some of the glitter from the pot of gold that promises to underpin the response to AMR. To that end, no time should be lost.

The final stop in this brief set of suggestions is to turn to all the other predictable revenue sources, from individual countries to foundations to the private sector and subject them to a full court press ... especially the private sector from whom miniscule resources have been received. But the country at the fulcrum of fundraising, the country that already gives the greatest financial support, but is capable of giving so much more is the United States.

There's a bitter irony here. Last year President Obama issued a *National Action Plan for Combating Multidrug Resistant Tuberculosis*. The plan provides a comprehensive design to tackle the global emergency of MDR and XDR-TB. The plan has ominous warnings about the consequences if MDR-TB isn't defeated. USAID informed Congress that additional resources would be required, but the White House inexplicably failed to ask for additional funding. Last night, in a marvellously eloquent dinner speech, Nick Herbert described TB as the orphan child. The question that should now preoccupy all of us, is how do we get Hillary Clinton to take the child out of the orphanage.

There's also a great deal of work to be done within Europe. From Germany to the Nordics, insufficient funds are forthcoming. How does one explain why some countries are so begrudging, so curmudgeonly, so anal retentive when it comes to tuberculosis? I would hold a succession of press conferences, capital to capital, in concert with colleagues living with TB or successfully cured of TB, setting out what we need, juxtaposed with what the country is giving. No more sweetness and light. No more groveling. No further delay. We assert a new and obvious mantra: "Another year, another two million lives."

Number 7: Champions. It has become obligatory to have celebrity champions for everything these days, so why not tuberculosis? But unlike others, from champions for peace to champions for AIDS, drawn from rugby to film to hip hop, we have the local home-grown variety, and I rather like that. We have Eric Goosby and Dr. Aaron Motsoaledi who runs the most successful and extensive TB/AIDS program in the world, and Lucica Ditiu and Mario Raviglione and José Castro amongst several others. An entourage faithfully follows Eric, banners and demonstrations follow Dr. Motsoaledi, hordes of breathless fans and levitating groupies follow Lucica, Dr. Margaret Chan follows Mario, and José ... well, José can instantaneously command a throng of two thousand in Liverpool alone.

These are our treasured champions living and breathing the issue. You want some others? By all means. I would shoot for the Elders, chaired by Kofi Annan, plus a choice crew of heads of state. But one of the best ideas, put to me by David Bryden of Results, is to have a number of the UNAIDS celebrity champions, from Annie Lennox to Naomi Watts to Vera Brezhneva to James Chau to Mateus Solano to Victoria Beckham, on World AIDS Day, December 1st, say publicly that they're redefining their championship status to reflect AIDS *and* TB. It would command social media for days.

Number 8: This is where it gets interesting. I've never been part of a discussion, AIDS included, where there are so many issues cascading outward from a communicable disease. It's quite surreal, and presents endless opportunities to bring public attention to tuberculosis. I obviously don't have time to explore the issues in depth, but I can at least give a glimpse of the possibilities.

We can make it impossible to debate AMR without incorporating MDR-TB. There are already some funders who are willfully excluding TB from their calculations. We should descend on them no holds barred and create a strong intellectual ruckus. They must not be permitted to disingenuously distort the findings of the O'Neill report on antimicrobial resistance by pretending that MDR-TB doesn't exist.

We can invoke the even more recent High-Level Panel on Access to Medicines. It uses MDR-TB as an illustration of the difficulty in accessing drugs. I know some of the members of the panel quite well: they could be conscripted into an advocacy role for tuberculosis. In the meantime, for those of you who haven't read the report, I urge you to do so.

Speaking of drugs, there's the continuing controversy over bedaquiline and delamanid. This is an excruciatingly complex subject: it always is with drugs. You never know quite what to believe because the drug companies, no matter what the rhetoric, are inevitably opaque when it comes to costs of compounds, costs of manufacture, costs of marketing, preferential tax benefits ... you'll never get the full and accurate story. It's further complicated by free drugs and compassionate use and tiered pricing and competing claims. Thank God there are experts in this hall; I get a pounding migraine just skimming

the surface of their annual reports: I feel as though both Janssen and Otsuka should pay me worker's compensation.

From my vantage point, both bedaquiline and delamanid seem, in the earliest stages of limited use, with more trials to come, to be beneficial. They are being used even with the phase 2b caveats. But inevitably, because it is a conditional approval, some governments are shying away and just aren't sure about whether to proceed. Even the positive news out of South Africa has not managed to provoke updated guidelines.

My own feeling is that regulatory authorities and regulatory approvals should proceed as quickly as humanly possible, particularly when it is a choice between drug and death. I've never, but never disputed the need for scientific appraisal. But I have lost patience when the scientists begin to dance on the head of a pin.

I want to relate an anecdote. A bitter anecdote.

In July of 2006, at the International AIDS Conference in Toronto, I sat at a press briefing beside Dr. Julio Montaner—he will be known to many of you—Head of the British Columbia Centre of Excellence, as he advanced his theory of Treatment as Prevention. He backed the theory with irrefutable scientific evidence gleaned from studies in British Columbia.

I remember being stunned by the exquisite simplicity of it all. The proposition that ARVs could reduce the viral load to undetectable levels, so that unprotected sex was unlikely to transmit the virus, and therefore treatment became prevention, was overwhelming, exhilarating. It was unanswerable. The science served to sanctify the logic.

I assumed that WHO would leap on it the next day. But no. Apparently, beyond WHO's control, there had to be another five, six, seven years of scientific studies and disputation before it was accepted. And of course it's been fully and unequivocally accepted. That was inevitable. But look how long it took.

I don't indict by extension anything that WHO has done with TB. In fact, delegates to this conference tell me that WHO has been most helpful in regulatory terms. I just know that there's a lot more regulatory demand coming, and I've been burned by the hallucinatory recognition that the delay in affirming treatment as prevention undoubtedly cost lives. Why must everything cost lives?

I can't pretend to expertise. But it does seem that there are a number of advanced diagnostic tools and formulations and regimens, much shorter regimens, on the threshold of scientific legitimacy, for both adults and children, for both drug susceptible and drug resistant TB, that deserve to make us hopeful. I'm not going to comment further on individual drugs or trials because there are still a number of announcements to be made in the next few days. But for what it's worth, I'm cautiously optimistic. My skepticism is receding. I'm trying to suppress quivers of expectation, but I have secret bouts of insufferable buoyancy.

But there's much more to talk about. For example, the inseparability of HIV and TB is something that requires far greater attention. Co-infection has been a stark reality since the 1980's, but now it feels overwhelming when four hundred thousand people living with AIDS die of tuberculosis. Somehow we

have to identify and treat both conditions simultaneously and persuade ministries of health that that's the right thing to do.

In truth, there's a veritable avalanche of issues, stemming from TB, that stimulate the brain to hyperactivity. Some are entirely straightforward: how do we get drugs to very sick people before they die, how do we reconstruct health systems, how do we reduce the costs for impoverished families, how do we keep track of what is happening in the private sector in so many countries, how do we persuade China and Russia and India and Indonesia and Pakistan and Nigeria and Brazil to plough more money into tuberculosis. How do we finance the 3P's?

And then there are the issues that coagulate the brain: how do you get political leadership on board? We will be in a quagmire of indecision until the political leadership comes to its senses.

Number 9: I suppose the primary answer to political leadership lies in civil society. This is no throwaway line on my part. I believe to the depths of my being in the power of civil society, so often fighting against odds that seem insuperable. Where TB is concerned, we need coalitions of NGOs that will take on the world.

I've watched MSF and the Treatment Action Campaign initiate antiretroviral treatment in Khayelitsha, outside Cape Town in the early 2000's, when the entire political leadership of South Africa was against them. They were absolutely undaunted. That's one of the great things about MSF's advocacy ... whether it's the bombing of hospitals or the tragedy of Ebola or access to drugs, they make their voices heard. As members of civil society, we should all get behind the STEP-UP for TB campaign that MSF and the STOP-TB Partnership are jointly promoting as an advocacy tool. But they're not the only such initiative at this conference. The Treatment Action Group, in conjunction with their R & D report, are asking us to sign a petition to the BRICS countries to triple their investment in research and development given the way TB is entrenched in their respective countries.

This afternoon I spoke to the Nursing and Allied Professionals sub-section of The Union imploring them to take public stands. They don't need much encouragement. They're on the front lines: they see, on a daily basis the carnage that tuberculosis hath wrought. But what is needed are their public voices, their public pressure, their public demands.

There's nothing secret about the art of advocacy. You simply fight on every front simultaneously to effect social change. You go after parliamentarians because they inhabit the corridors of power; you go after the senior bureaucratic establishment because they can work magic behind the scenes (they can also throw a spanner in the works); you go after the medical establishment because it too often becomes smug and complacent; you go after the multi-national drug companies because they're the most powerful lobby in the world; a lobby that dictates the terms of international trade agreements, and a lobby that almost invariably puts profit before conscience.

If we keep at it at every level, tenaciously, indefatigably, then one day the pendulum swings. We have the STOP-TB Partnership, irrepressibly led by Lucica, and all of their affiliates who occupy the front-lines of advocacy... I won't try to name all the affiliates, they are now legion ... I sat in the upstairs assembly hall yesterday listening to representatives of the WHO Civil Society Task Force on TB; and at various moments in the last few days, I've heard the most powerful voices of all ... the voices of people living

with TB or who have survived MDR or XDR TB ... they are the true experts who can make the powerful listen, can make consciences turn and can make ministers of finance open the vaults.

Assembled here at this remarkable Union gathering are all the people we need to turn the tide on tuberculosis, meeting the Sustainable Development Goal of ending TB by 2030.

And that brings me to my final point. I received a couple of e-mails not long ago from Dr. Jennifer Furin ... she will be known to many of you. She'll be embarrassed that I'm quoting her publicly, but I'll beg forgiveness after this speech. This is what she writes, in part:

I am feeling so acutely the need to make big changes, as I am sitting here in Tajikistan taking care of dozens of children with XDR-TB. It is heartbreaking and I am seeing first-hand the dire predictions of the O'Neil AMR report ... coming true as we keep finding more and more children each day. This is a result of direct transmission, and I just cannot accept the fact that we are going to continue on in the same way and think we will be successful. We need help. These kids deserve help.

We really need to change things so drastically and quickly. I spent yesterday on the adult XDR-TB ward at Machiton Hospital here Dushanbe where there are about sixty adults (most of them so young) with XDR-TB. MSF has been able to get bedaquiline for about ten of them ... But what this means is that in the rooms where there are 4-5 XDR-TB patients—because there are so many of them they have to cram them into the rooms—maybe 1 of them is getting proper XDR-TB treatment via MSF but the others are getting really terrible regimens. And when we go in to see our patients the others cry and beg us to help them, and they are just wasting away in this horror show ... They are dying—and inadvertently spreading disease—because in spite of our best efforts over the last twenty years, the existing TB community cannot get our act together. I am sorry if I sound desperate, but basically I am. It is very haunting to be in the middle of these scenarios and most haunting of all is that it is completely unnecessary.

And that's what this meeting is all about. All of us understand that we can never allow ourselves to lose sight of the pain, despair and desolation that is the steady pulse rate of tuberculosis. Let's face it: we can win this battle, but at this very moment, the battle is not being won.

And that's intolerable. It's absolutely indefensible. We know how to bring TB to its knees. It's just that the masters of the universe have become impervious to human suffering ... suffering that doesn't play out in convulsions in the headlines, or cable television or social media on a continuing basis. So we know the challenge. What a world this has become.

I want to end with a story.

Some years ago, I was travelling in Uganda with Graça Machel, the widow of Nelson Mandela. We wanted to take a look at child-headed households. We visited Rakai, ground zero of HIV/AIDS in Uganda. The villagers took us to a hut with five children, three girls, 14, 12 and 10, and two boys, 11 and 8. Graça sent everyone away except for a translator and a community health worker. We sat against the wall: I had my left arm around the two boys, Graça had her right arm around the three girls. I did not know what was coming.

Graça turned gently to the two older girls and said, "Have you started to menstruate yet?" And in the shy, quiet voices of African children, they replied, "Yes." Graça said, "Do you know what it means? Have you spoken to your teacher about it? Have you spoken to any villagers about it? Has anyone helped? Has anyone brought you pads?" And as I listened, I suddenly realized that I was witness to the first act of 'mothering' that those girls had received on one of the most transformational experiences of a young girl's life.

I've been thinking, on the way to this meeting, how an entire generation of parents had disappeared, leaving all of those young girls behind. And given the numbers of deaths from tuberculosis, we are hazarding the loss of another generation, with similar consequences for the children left behind.

I'm not sure, just to be unbearably honest, exactly what to do so that the worst is prevented. But it seems to me that we have all the people, all the ingredients, all the components necessary to win this fight to end TB. Let's do so together.

###